

REMARKS/ARGUMENTS

Reconsideration and re-examination are hereby requested.

The objection to the specification is not understood. According to applicant's records (See response mailed July 31, 2002) the paragraph [0012] is one sentence and states:

In one embodiment the common parameter is temperature.

With regard to the rejection of claims 4-13, and in particular to the rejection of claim 12, such claim includes the following:

- (a) detecting an exothermic reaction across the catalyst;
- (b) measuring a temperature of an output of the catalyst in response to the detected exothermic reaction; and
- (c) injecting the hydrocarbon into the reaction in accordance with the measured temperature. (emphasis ours)

The Examiner correctly indicated that in Hirota et al., the temperature t2 (lower case t) is a measured temperature. However, the temperature T2 (capital T) is not a measured temperature. The temperature t2, i.e., the measured temperature of Hirota et al., is not measured in response to the detected exothermic reaction as set forth in claim 12. **Thus, Hirota et al., do NOT inject a hydrocarbon into the reaction in accordance with the measured temperature of an output of the catalyst in response to detection of exothermic reaction.** To put this still another way, with Hirota et al., hydrocarbon injection is not based upon the measured temperature of the catalyst when an exothermic reaction is detected.

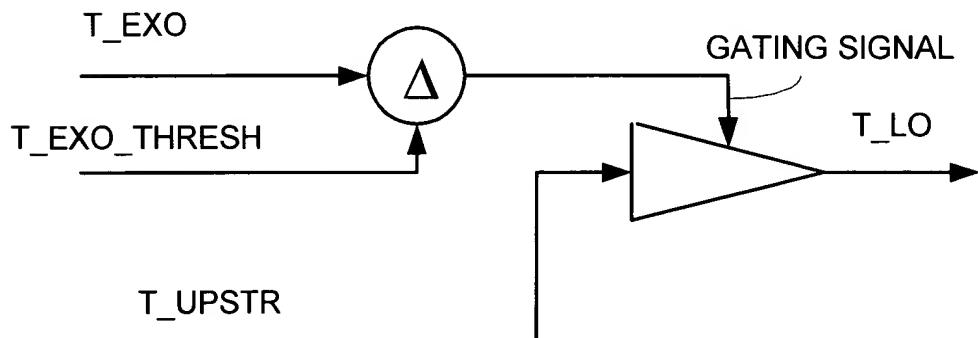
The diagram below is representative of a portion of applicant's method and system:

INVENTION

T_{EXO_THRESH} is a reference temperature

$T_{UPSTREAM}$ is a temperature at the output of the catalyst

T_{LO} is the MEASURED temperature value of T_{UPSTR} when T_{EXO} exceeds T_{EXO_TRESH} and therefore T_{LO} is a MEASURED temperature



Find's way:

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way

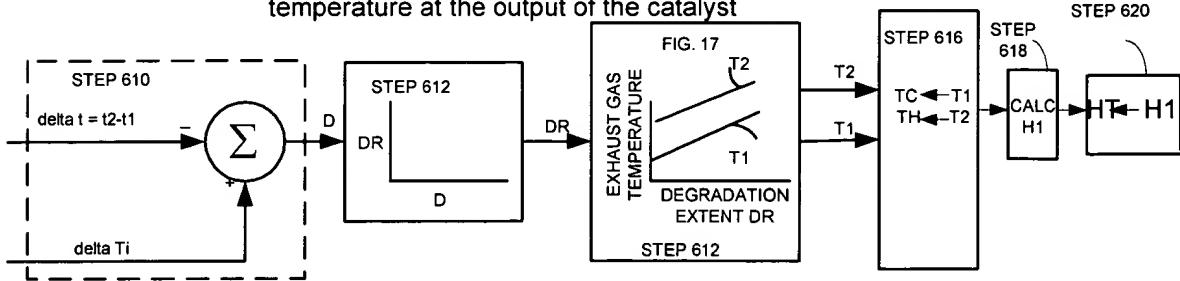
Note that an exothermic reaction across the catalyst is detected (i.e., when T_{EXO} exceeds T_{EXO_THRESH}) is detected and the temperature of an output of the catalyst (T_{UPSTR}) is measured (i.e, the temperature T_{LO} is the measured temperature at the output of the catalyst when T_{EXO} exceeds T_{EXO_THRESH}). Hydrocarbon is injected into the reaction in accordance with the measured temperature (T_{LO})

The diagram below is a representation of the system and method of Hirota et al.

HIROTA ET AL.

t_1 and t_2 are measured temperatures and thus Δt is the difference between two measured temperatures

T_2 is the upper limit of a temperature RANGE, it is NOT a measured temperature at the output of the catalyst



As noted above, t_2 is a measured temperature and T_2 is NOT a measured temperature.

Clearly, Hirota et al., do NOT measure a temperature of an output of the catalyst in response to "the detected exothermic reaction". Thus, Hirota et al. do NOT inject the hydrocarbon into the reaction in accordance with the "measured" temperature as set forth in claim 12.

Thus, Hirota et al., do NOT inject a hydrocarbon into the reaction in accordance with the measured temperature of an output of the catalyst in response to detection of exothermic reaction. To put this still another way, with Hirota et al., hydrocarbon injection is not based upon the measured temperature of the catalyst WHEN an exothermic reaction is detected (i.e., in response to detection of).

With regard to claim 1, the Examiner has taken the position that it is obvious that the exotherm referred to in Hirota et al. is generated by the combustion of hydrocarbons. Without arguing that point, we reiterate that claim 1 includes "injecting the hydrocarbon into the engine exhaust in accordance with detection of a light-off event". **Claim 1 is not stating** "injecting the hydrocarbon into the engine exhaust in accordance with detection of an exotherm". The light-off event is illustrated on page 5 of this response, and is the event where the exotherm crosses a certain threshold; that is, when T_{EXO} exceeds $T_{EXO\ THRESH}$. The exotherm, T_{EXO} , is an input to detection of the light-off event, not the event itself. The light-off event is when T_{EXO} exceeds $T_{EXO\ THRESH}$ not

*need to
define light-off event in claim 1*

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T EXO. Claim 1 points out that hydrocarbon is injected in accordance with detection of a light-off EVENT, not with an input used to detect such event. Also, the examiner uses the term "isotherm" at the top of page 8, however it has been assumed that the appropriate term is "exotherm".

In the event any additional fee is required, please charge such amount to Patent and Trademark Office Deposit Account No. 50-0845.

Respectfully submitted,

12/20/04

Date



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